

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P243429

Luminaire Tested: **S123RDR-H340D835-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P243429  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-69)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDR-H340D835-X4F0-XX-UDD-A-W  
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

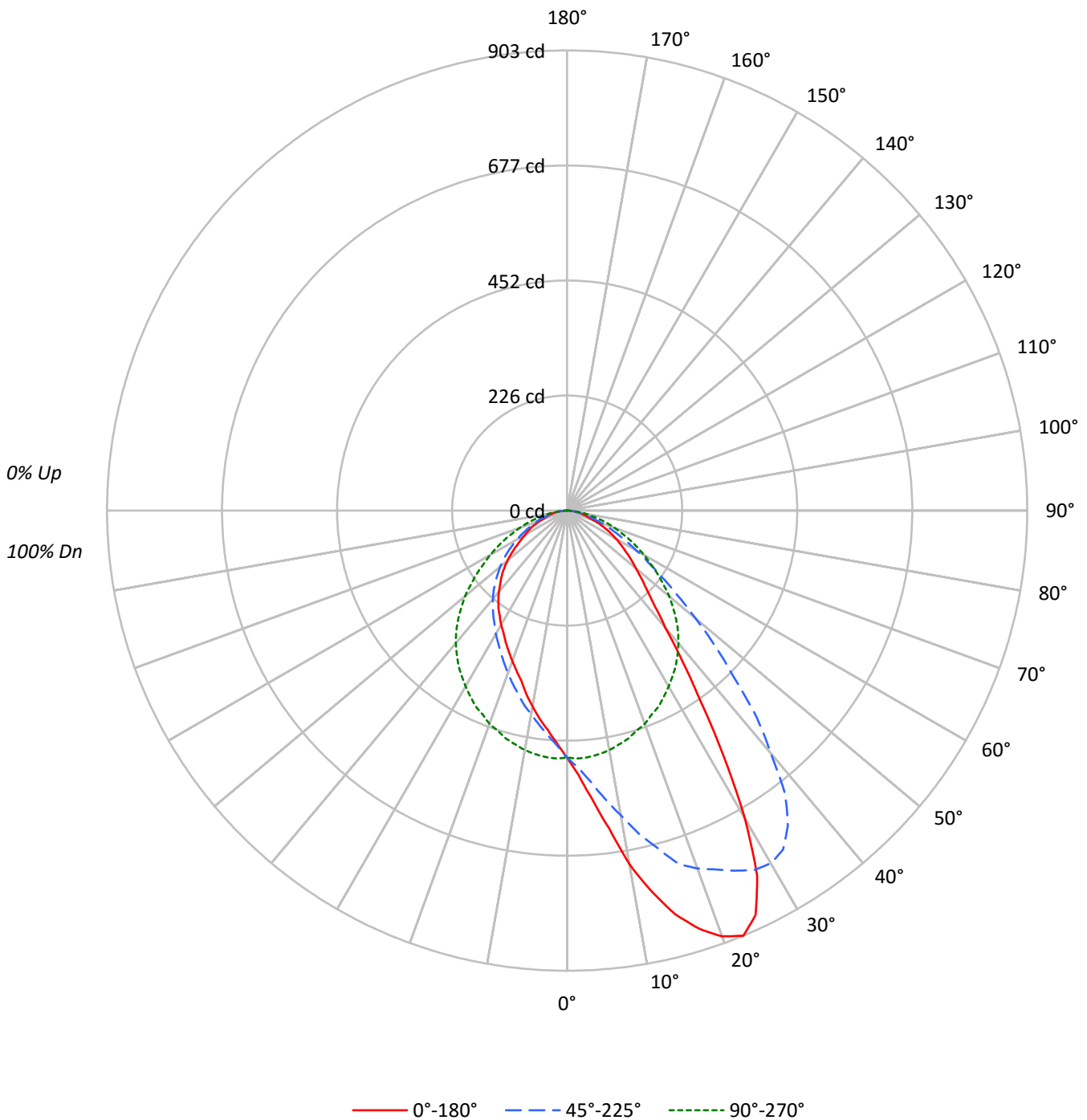
Lumens per Lamp: N/A  
Luminaire Lumens: 1263.1 lumens  
Efficiency: N/A  
Efficacy: 112.8 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.22 / 1.4  
Luminous Opening: Rectangular (W 3.88' x L: 0.23' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 11.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P243429

CATALOG NUMBER: S123RDR-H340D835-X4F0-XX-UDD-A-W

### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	89	87
2	101	94	88	83	99	92	86	82	89	84	80	85	81	78	82	79	76	74
3	93	84	76	70	91	82	75	70	79	73	68	76	71	67	74	70	66	64
4	86	75	67	61	84	74	66	60	71	65	59	69	63	59	67	62	58	56
5	79	68	59	53	77	66	59	53	64	57	52	62	56	52	61	55	51	49
6	74	61	53	47	72	60	52	47	59	52	46	57	51	46	55	50	46	44
7	69	56	48	42	67	55	47	42	54	47	41	52	46	41	51	45	41	39
8	64	51	43	38	62	51	43	37	49	42	37	48	42	37	47	41	37	35
9	60	47	39	34	59	47	39	34	45	39	34	44	38	34	43	38	33	32
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°
0°	5876	5876	5876
5°	6927	5909	5261
10°	8671	5873	4801
15°	10291	5815	4349
20°	11469	5745	4050
25°	11707	5675	3813
30°	9755	5578	3626
35°	6740	5500	3474
40°	4736	5375	3293
45°	3804	5184	3115
50°	3315	4937	2881
55°	2973	4569	2566
60°	2688	4221	2325
65°	2352	3889	2174
70°	1900	3501	1839
75°	1649	3049	1803
80°	1522	2604	1815
85°	1335	2100	1572



TEST NUMBER: P243429

CATALOG NUMBER: S123RDR-H340D835-X4F0-XX-UDD-A-W

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	47.5	3.8
10°-20°	149.7	11.9
20°-30°	239.9	19.0
30°-40°	260.4	20.6
40°-50°	223.1	17.7
50°-60°	169.1	13.4
60°-70°	108.1	8.6
70°-80°	51.7	4.1
80°-90°	13.6	1.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	437.1	34.6
0°-40°	697.6	55.2
0°-60°	1089.8	86.3
0°-90°	1263.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1263.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	485	485	485	485	485	
5°	569	534	486	441	432	58
15°	820	686	463	372	347	232
25°	875	780	424	308	285	388
35°	456	755	372	252	235	293
45°	222	462	302	200	182	175
55°	141	226	216	143	121	127
65°	82	109	136	86	76	82
75°	35	43	65	41	38	38
85°	10	10	15	12	11	11
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8
2.5°	519.5	520.1	519.1	518.9	518.7	515.3	514.3	512.6	506.7	505.3	504.2
5°	569.3	567.6	569.5	566.0	562.0	559.7	555.9	547.5	540.2	534.4	530.6
7.5°	628.3	629.0	627.1	623.7	615.8	612.4	602.2	592.1	582.5	570.4	561.4
10°	704.5	699.5	700.6	690.1	681.7	671.7	657.6	641.5	624.6	607.4	594.6
12.5°	765.2	768.8	766.3	761.3	745.1	735.3	722.5	699.1	672.3	649.3	629.8
15°	820.1	815.3	815.9	803.7	797.9	788.9	767.7	744.5	727.1	685.5	662.5
17.5°	860.3	859.8	859.2	849.0	841.8	823.0	801.4	777.6	755.8	726.9	698.0
20°	889.1	892.3	891.4	883.1	870.5	852.3	839.3	809.6	773.8	747.4	712.1
22.5°	903.0	903.2	903.6	899.6	891.2	879.5	861.1	837.2	805.4	762.3	722.9
25°	875.3	876.4	881.8	885.2	887.5	882.2	872.6	851.0	823.6	779.7	738.9
27.5°	807.5	810.9	816.9	837.0	845.2	856.5	860.5	851.9	831.6	795.0	748.5
30°	697.0	706.4	712.3	735.1	767.1	797.3	811.5	825.5	823.6	799.3	752.3
32.5°	570.6	576.6	593.6	618.1	643.4	687.6	737.0	770.9	789.9	788.7	755.4
35°	455.5	464.2	478.7	497.3	532.3	578.1	634.0	687.4	735.1	755.0	743.0
37.5°	369.6	370.5	384.1	410.5	432.2	472.6	523.1	589.0	651.6	703.5	715.0
40°	299.3	305.2	312.3	328.8	354.6	393.3	426.8	491.7	556.5	621.6	668.1
42.5°	254.9	254.9	262.9	273.4	290.5	313.8	353.7	412.5	470.9	550.9	603.2
45°	221.9	224.0	227.5	234.2	246.4	264.4	295.3	335.3	395.0	462.2	540.9
47.5°	198.0	197.8	200.9	204.9	214.3	227.9	246.1	278.6	322.8	395.2	464.7
50°	175.8	176.7	179.0	182.3	188.6	198.2	209.7	234.2	271.5	328.8	401.7
52.5°	158.7	158.4	160.3	162.4	167.2	172.7	182.9	201.1	226.9	272.5	333.0
55°	140.7	141.5	143.8	145.1	149.0	152.6	161.2	171.4	192.1	226.5	281.5
57.5°	125.2	126.2	127.5	128.7	131.4	135.0	142.1	148.4	163.5	188.2	232.1
60°	110.9	110.5	112.0	114.1	115.5	118.7	122.7	129.1	139.6	157.2	189.4
62.5°	96.7	96.9	97.1	98.4	101.1	103.8	107.4	112.2	118.5	131.4	154.3
65°	82.0	82.3	82.7	83.9	86.7	88.3	92.1	96.3	101.3	109.0	125.0
67.5°	69.1	69.9	69.9	71.0	72.0	73.7	76.4	79.5	83.7	89.4	99.6
70°	53.6	53.4	54.4	56.5	57.6	60.5	62.4	64.5	68.2	71.8	80.6
72.5°	43.1	43.1	43.1	44.0	44.2	44.8	46.0	50.4	53.4	56.9	61.7
75°	35.2	35.4	35.4	35.6	35.8	36.4	36.8	38.1	38.9	42.7	45.6
77.5°	28.0	28.3	28.3	28.5	28.7	28.9	29.7	29.7	30.3	31.2	32.4
80°	21.8	21.6	21.6	21.8	21.8	22.4	22.4	22.8	23.0	23.4	24.1
82.5°	15.5	15.3	15.5	15.3	15.5	15.7	16.1	15.9	16.3	16.7	17.0
85°	9.6	9.8	9.8	10.3	10.0	9.8	10.0	10.0	10.0	10.0	10.5
87.5°	4.2	4.6	4.6	4.4	4.6	4.6	4.2	4.6	4.6	4.6	4.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P243429

CATALOG NUMBER: S123RDR-H340D835-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8
2.5°	503.6	502.8	499.6	496.7	492.3	490.4	487.9	486.9	483.5	478.9	476.8
5°	527.0	520.8	514.7	507.4	501.3	494.2	490.2	485.6	478.5	472.0	467.4
7.5°	551.9	542.7	531.4	519.3	508.4	498.2	489.4	482.0	472.8	463.8	456.7
10°	579.4	563.7	545.5	530.0	514.3	499.4	488.3	477.2	465.3	454.0	445.4
12.5°	608.9	586.7	564.7	541.5	518.0	500.9	484.3	470.1	456.7	444.8	434.5
15°	639.4	609.1	581.0	554.9	522.2	499.2	481.0	463.4	446.7	432.0	422.0
17.5°	661.2	626.5	591.1	554.0	526.0	497.5	474.9	452.7	437.2	422.2	408.6
20°	681.3	641.9	599.9	565.3	526.2	491.5	466.8	445.4	423.8	407.7	396.2
22.5°	689.9	654.3	611.8	563.9	524.7	489.2	457.3	433.3	414.0	396.4	381.4
25°	691.6	651.8	608.2	562.0	519.1	480.6	448.3	424.3	399.2	380.9	369.2
27.5°	698.9	644.5	601.8	555.7	512.2	472.0	438.1	411.3	387.8	368.4	353.3
30°	700.8	641.3	587.9	544.0	499.2	459.8	425.5	398.5	373.0	353.1	339.5
32.5°	701.6	637.1	573.5	525.4	482.7	445.6	414.2	384.9	360.6	339.7	325.7
35°	698.7	631.3	556.1	504.2	463.2	426.8	397.7	371.7	344.7	325.1	310.2
37.5°	687.2	622.1	546.3	479.5	440.4	406.1	381.4	355.8	330.9	309.6	294.3
40°	665.4	608.7	527.9	458.8	414.4	383.7	360.6	339.7	314.6	294.1	279.0
42.5°	630.6	590.5	510.9	435.4	388.7	359.6	340.3	322.3	299.7	280.3	263.7
45°	579.2	564.9	488.3	411.5	360.6	333.2	316.5	302.4	281.9	264.1	248.9
47.5°	523.5	526.6	465.5	387.2	335.1	308.9	294.3	281.9	266.4	247.4	233.4
50°	459.2	476.4	433.5	362.7	309.6	283.8	269.4	261.8	247.4	231.5	218.3
52.5°	400.4	427.6	401.0	335.9	284.4	259.1	245.7	238.2	228.6	215.4	202.0
55°	339.5	374.0	354.8	307.1	258.9	233.4	222.1	216.2	208.3	198.0	185.9
57.5°	289.1	325.9	313.8	276.7	234.0	211.0	200.9	194.2	189.4	180.0	170.2
60°	239.7	273.8	269.0	241.8	209.3	187.3	179.6	174.1	170.2	163.3	153.6
62.5°	193.4	226.5	229.4	208.1	185.2	165.4	158.2	154.5	151.3	145.9	137.1
65°	153.4	182.5	188.6	172.3	159.9	144.8	137.9	135.6	133.3	127.0	120.4
67.5°	120.1	143.0	150.9	141.7	132.9	124.1	118.7	115.5	113.9	110.1	105.5
70°	91.9	111.6	118.3	114.3	108.4	105.1	100.9	98.8	97.1	92.3	89.8
72.5°	68.9	82.3	90.6	89.4	88.1	85.8	83.3	82.7	80.2	77.0	74.7
75°	50.4	58.2	65.7	68.4	68.0	68.9	66.1	65.1	63.6	61.3	59.4
77.5°	36.2	40.8	46.0	49.4	51.1	51.3	51.3	50.7	49.6	47.9	46.5
80°	25.1	26.2	31.0	34.1	35.8	37.0	37.0	37.3	36.2	35.6	34.5
82.5°	17.4	18.0	19.0	21.6	23.7	25.1	25.3	25.1	24.7	24.5	23.0
85°	10.9	10.7	10.7	11.3	13.0	14.4	14.7	15.1	14.9	14.7	13.2
87.5°	4.6	4.6	4.8	4.6	5.2	5.4	5.9	6.9	6.7	5.7	5.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P243429

CATALOG NUMBER: S123RDR-H340D835-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8	484.8
2.5°	475.5	472.8	470.3	467.6	464.2	461.1	460.7	460.3	461.3	459.2	458.4
5°	463.8	458.6	454.6	449.6	446.0	441.4	438.9	438.3	438.1	436.8	435.2
7.5°	451.1	445.4	439.8	434.1	428.2	423.4	420.7	419.2	418.0	415.9	414.2
10°	439.1	432.0	425.9	418.2	411.9	405.6	403.1	401.0	399.8	396.8	394.5
12.5°	425.7	416.7	410.0	401.7	396.0	390.6	386.6	382.6	379.7	375.3	373.4
15°	414.0	404.6	393.3	388.3	380.3	372.1	367.8	367.8	361.7	358.1	355.8
17.5°	398.3	390.1	382.2	371.9	360.6	355.8	350.8	346.4	342.2	341.2	337.0
20°	384.5	374.9	366.7	355.6	345.4	339.7	333.8	329.0	325.9	323.0	320.7
22.5°	370.9	361.3	348.7	337.8	330.9	323.4	317.1	312.9	310.2	305.8	303.7
25°	356.7	345.1	333.8	323.2	314.6	308.1	301.6	299.3	294.5	292.2	289.3
27.5°	342.4	328.6	317.9	308.7	299.1	292.8	288.4	284.2	280.1	278.8	277.1
30°	326.5	313.8	303.5	294.5	285.3	279.8	274.6	270.8	267.3	264.6	262.7
32.5°	310.6	299.9	290.1	279.6	271.3	265.4	261.0	257.7	256.0	251.4	249.7
35°	296.0	285.1	274.6	264.8	258.1	252.4	248.4	245.3	241.8	238.8	237.1
37.5°	280.9	271.1	260.4	252.0	244.5	239.9	235.5	231.3	228.6	226.9	224.8
40°	266.2	255.8	247.6	238.4	231.7	226.5	221.9	218.7	215.4	213.9	211.2
42.5°	252.4	242.4	233.0	224.6	218.5	213.5	209.1	205.5	202.8	200.1	198.6
45°	236.5	227.7	219.1	210.8	205.1	199.7	194.9	191.7	188.0	185.7	184.8
47.5°	223.1	213.9	204.7	197.0	191.1	185.2	181.3	177.5	174.4	172.1	170.8
50°	207.2	198.6	191.1	183.4	177.7	171.4	166.6	163.1	159.5	157.8	155.7
52.5°	193.6	185.2	176.0	169.1	162.6	157.2	152.8	149.9	146.7	144.2	142.7
55°	176.7	168.5	161.2	153.8	147.4	143.0	139.4	134.4	131.7	129.1	125.2
57.5°	161.8	154.1	146.3	139.2	133.1	127.9	123.5	120.1	116.6	114.7	112.0
60°	146.1	137.9	130.8	125.4	118.7	113.0	110.1	106.1	103.2	100.3	99.4
62.5°	130.6	123.1	116.0	110.3	104.2	99.8	96.1	94.2	91.3	89.0	88.1
65°	114.5	108.2	101.5	95.2	91.5	86.4	84.4	81.2	79.5	78.5	78.3
67.5°	98.6	92.9	86.9	82.0	78.5	75.1	72.6	71.4	69.7	68.4	67.4
70°	84.1	78.7	73.5	69.5	66.8	64.3	62.6	60.3	58.6	56.9	54.6
72.5°	69.9	65.5	61.1	58.0	55.3	53.8	51.5	47.9	46.3	45.8	45.6
75°	56.7	51.9	48.8	47.1	44.6	41.0	39.6	39.1	38.9	38.5	38.5
77.5°	43.7	40.8	38.7	35.2	33.9	33.7	32.7	32.4	32.0	32.2	32.2
80°	31.8	30.1	27.6	26.6	26.2	26.4	26.0	26.2	25.7	26.0	25.5
82.5°	21.1	19.7	20.1	19.5	19.5	19.9	19.7	19.0	19.0	18.8	18.8
85°	12.6	12.3	12.8	12.8	12.6	11.9	12.3	12.1	11.5	11.7	11.7
87.5°	5.4	5.4	5.4	5.2	5.4	5.2	5.2	5.2	4.6	4.6	4.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0





TEST NUMBER: P243429

CATALOG NUMBER: S123RDR-H340D835-X4F0-XX-UDD-A-W

**CANDELA DISTRIBUTION (continued):**

	165°	170°	175°	180°
0°	484.8	484.8	484.8	484.8
2.5°	458.8	458.4	457.8	457.1
5°	435.2	433.3	433.1	432.4
7.5°	413.0	412.1	410.7	412.3
10°	392.7	393.3	391.8	390.1
12.5°	371.5	370.3	368.0	369.2
15°	352.9	350.8	349.5	346.6
17.5°	333.4	331.8	331.8	329.9
20°	316.5	314.8	315.2	314.0
22.5°	302.2	301.0	299.1	299.3
25°	288.8	287.0	284.9	285.1
27.5°	274.0	272.3	271.9	270.4
30°	260.8	259.3	259.1	259.1
32.5°	248.0	247.4	246.4	245.7
35°	236.9	236.1	234.4	234.8
37.5°	223.1	222.3	222.1	221.9
40°	210.1	209.5	207.8	208.1
42.5°	197.2	196.1	195.1	194.7
45°	183.1	182.9	181.3	181.7
47.5°	169.7	169.3	168.5	167.4
50°	154.9	154.7	154.1	152.8
52.5°	140.4	139.8	138.6	137.3
55°	124.1	122.2	122.4	121.4
57.5°	110.7	109.9	108.2	107.6
60°	97.7	96.9	96.7	95.9
62.5°	86.9	86.0	85.4	85.4
65°	77.0	76.0	75.8	75.8
67.5°	66.1	65.1	64.9	64.5
70°	52.5	52.3	51.9	51.9
72.5°	45.2	45.0	45.2	44.4
75°	38.5	38.3	38.3	38.5
77.5°	32.0	32.0	31.8	31.8
80°	25.3	25.5	25.3	26.0
82.5°	19.0	18.6	18.8	18.4
85°	11.7	11.7	11.3	11.3
87.5°	4.6	4.6	4.6	4.6
90°	0.0	0.0	0.0	0.0

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